

NRO REVIEW COMPLETED

CENTRAL INTELLIGENCE AGENCY
WASHINGTON 25, D.C.

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3 OCT 1963

MEMORANDUM FOR: Director, National Reconnaissance Office.

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SUBJECT : Modification to [redacted]

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1. In June of this year it became apparent that certain modifications, if feasible, would be necessary for the [redacted] to conform to OXCART operational requirements. More recent, beginning 26 August 1963, OXCART oriented tests have proven this need for further refinements in the ranging principles employed. Informal studies were initiated in June and have since proved that these modifications can, in fact, be accomplished. Significant desirable improvements include:

A. Reduction in the time required for an INTERROGATOR to secure range readout from 40 seconds at a distance of 1,000 miles to 4 seconds for any distance within the capability of the equipment.

B. Addition of automatic RESPOND function, not requiring any participation by a RESPONDER operator when range measurement is performed by an INTERROGATOR.

C. Addition of RANGE ADDRESS function permitting selective ranging between an INTERROGATOR and any one of several different RESPONDERS on a single code-frequency channel.

D. Addition of CONTINUOUS-RANGE function which can provide range information automatically updated at 8 second intervals at both terminals of a cooperative range link.

E. Addition of a capability for an INTERROGATOR to automatically extend the transmission time of a RESPONDER, to permit the INTERROGATOR to secure bearing information without requiring RESPONDER discipline.

F. Retention of normal communications capability.

2. The [redacted] has submitted a cost proposal covering the desired changes. The work [redacted]

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is to be accomplished at the [redacted]
[redacted] California, and the estimated costs amount to
[redacted] The contractor has indicated that the first step,
re-design of six (6) systems can be completed in six (6)
months. The contractor further indicated that the second
step can be completed fourteen (14) weeks after approval of
a prototype model accomplished in the first step. The cost
breakdown of the aforementioned steps is as follows:

A. Research and development resulting in
the re-design and test of six (6)
systems. Costs - [redacted]

B. Rework of remaining 44 airborne systems and
five ground stations. Costs at [redacted] -

3. A detailed breakdown of the sub-components requiring
re-designing or substantial modifications are shown in the
attachment.

4. Project officers for the R-12 program have been
contacted and anticipate [redacted] procurements to satisfy
R-12 requirements to reflect the above outlined changes.
No information is immediately available on the costs of the
new systems reflecting these changes; however, it is under-
stood that present plans call for an initial procurement of
nine (9) [redacted] airborne systems [redacted] for the R-12
program.

5. Accordingly, it is requested that the aforementioned
[redacted] be made available to Director, Program B, for these
modifications. Your approval is requested by written reply.

6. I would also like to take this opportunity to query
you as to what action has been taken on my previously sub-
mitted memorandum, dated 26 August 1963, Subject: [redacted]
[redacted] for Use at OXCART Forward Staging
Bases [redacted]

[redacted]
JACK C. LEDFORD
Colonel, USAF
Director, Program B, NRO

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A. Research and development resulting in the re-design and test of six (6) systems. Costs [redacted]

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B. Rework of remaining 44 airborne systems and five ground stations. Costs at [redacted]

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3. A detailed breakdown of the sub-components requiring re-designing or substantial modifications are shown in the attachment.

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4. Project officers for the R-12 program have been contacted and anticipate [redacted] procurements to satisfy R-12 requirements to reflect the above outlined changes. No information is immediately available on the costs of the new systems reflecting these changes; however, it is understood that present plans call for an initial procurement of nine (9) [redacted] airborne systems [redacted] for the R-12 program.

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5. Accordingly, it is requested that the aforementioned [redacted] be made available to Director, Program B, for these modifications. Your approval is requested by written reply.

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6. I would also like to take this opportunity to query you as to what action has been taken on my previously submitted memorandum, dated 26 August 1963, Subject: [redacted]

[redacted] for Use at OXCART Forward Staging Bases ([redacted])

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JACK C. LEDFORD
Colonel, USAF
Director, Program B, NRO

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ATTACHMENT

Sub-components requiring re-design or substantial modifications:

(1) Control Unit for all installations must be completely re-designed.

Part No. 708799-801 (for [] installations in KC-135 and A-12)

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Part No. 714363-801 (for [] ground station installations)

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(2) Generator Module must be completely re-designed.

Part No. 714014-801 (common to all three installations)

(3) Programmer Module must be completely re-designed.

Part No. 714013-801 (common to all three installations)

(4) Counter Module will be substantially modified.

Part No. 713011-801 (common to all three installations)

(5) Modem Module will be modified to a certain extent

Part No. 714015-801 (common to all three installations)

(6) Receiver Module will be modified to a minor extent.

Part No. 714012-801 (common to all three installations)

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(7) Chassis for Receiver-Transmitter will be modified to accept module changes.

Part No. 714009-801 (for KC-135 installation)

Part No. 714009-802 (for A-12 installation)

Part No. 713971-801 (for Ground Station installation)

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